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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,643	10/20/2003	Tetsuya Mino	100186-00020	8971

7590 06/01/2006

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EXAMINER	
KIM, PAUL D	

ART UNIT	PAPER NUMBER
3729	

DATE MAILED: 06/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/687,643	MINO, TETSUYA	
	Examiner	Art Unit	
	Paul D. Kim	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 May 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is a response to the after final amendment filed on 5/24/2006.

Examiner's Comment

1. Upon further consideration, examiner hereby withdraws the last final office action mailed on 3/15/2006. In view of the request for consideration, the finality of the last final office action mailed on 3/15/2006 is hereby withdrawn. In addition, the rejection for the 35 U.S.C. 112, first paragraph, is hereby withdrawn.

Claim Objections

2. Claim 4 is objected to because of the following informalities: The phrase "tantalum oxide" as recited in line 2 appears to be –tantalum pentoxide--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cole et al. (US PAT. 5,452,164) in view of Katz (US APT. 4,458,279).

Cole et al. teach a process of making a thin film magnetic head comprising process of: sequentially depositing a first magnetic layer (84), a non-magnetic layer (G) and a second magnetic layer (82) as shown in Figs. 7B-10; and forming a three-layer pole tip structure located between an air bearing surface and a position at a predetermined height from the air bearing surface by dry etching with ion milling (col. 10, lines 26-32) the first magnetic layer, the non-magnetic layer and the second magnetic layer at the same time as shown in Fig. 17 (col. 8, line 59 to col. 10, line 32). In addition to the Cole et al. teach an etching process by using any dry etching process such as reactive ion milling etching as well as ion beam milling (which is not the reactive ion milling disclosed in col. 10, lines 26-32).

However, Cole et al. fail to teach a material used for the non-magnetic layer, which having an etching rate equal or higher than the magnetic layers. Katz teaches a process of making a thin film magnetic head having a first pole piece (12) and a second pole piece (26) separated by an insulating layer made of silicon dioxide (as per claim 2, col. 2, lines 48-51) in order to have a desired pattern of the pole pieces. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a non-magnetic layer of Cole et al. by an insulating layer made of silicon dioxide as taught by Katz in order to have a desired pattern of the pole pieces.

In addition, Cole et al., modified by Katz, fail to disclose a material used for the first and second magnetic layers such as nitride containing iron (FeN). Even though Cole et al., modified by Katz, fail to disclose a magnetic material used for the pole

layers, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use the magnetic material as recited in the claimed invention because Applicant has not disclosed that the magnetic material as recited in the claimed invention provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Okai et al. because the magnetic material of FeN as recited in the claimed invention would perform equally well with the magnetic material of Cole et al., modified by Katz. Therefore, it would have been an obvious matter of design choice to modify the magnetic material of Cole et al., modified by Katz, to obtain the invention as specified in claim 3.

Response to Arguments

5. Applicant's arguments with respect to claims 1-4 have been considered but are moot in view of the new ground of rejection. Rejections are based on the newly cited reference.

6. Applicant argues that the prior art of record fails to disclose the claimed invention such as an insulating material having an etching rate equal or higher than the magnetic layers. Katz teaches a process of making a thin film magnetic head having a first pole piece (12) and a second pole piece (26) separated by an insulating layer made of silicon dioxide. In light of the specification, the material made of silicon dioxide has a higher etching rate than the magnetic material.

Conclusion

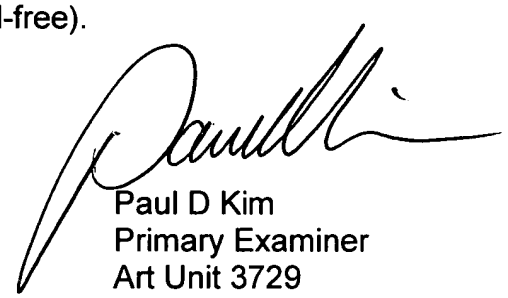
7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Friday between 6:00 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul D Kim
Primary Examiner
Art Unit 3729